

Sustainable development and challenges of the time in modern ecology (using the example of China)

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Abstract. The paper explores the relationship between traditional values in Chinese culture and modern environmental problems. The authors analyze which aspects of Chinese culture can contribute to sustainable development, especially in the context of climate change, environmental pollution and threats to biodiversity. The article discusses the concepts, principles and practices inherent in traditional Chinese culture that can be adapted and implemented to solve modern environmental problems. This may include aspects of philosophy, ethics, art, as well as traditional methods of natural resource management. The article also discusses the opportunities for modern society in China to integrate these values into politics and everyday life in order to create sustainable practices and promote environmental responsibility. The authors highlight examples of successful integration of traditional values into modern sustainable development initiatives. Thus, the paper presents a look at the potential of using cultural heritage to solve modern environmental problems and emphasizes the importance of taking traditions into account when forming sustainable development strategies in China and possibly in other parts of the world.

1 Introduction

In the modern world, the issues of sustainable development and environmental sustainability are becoming more relevant and critical. Rapid climate change, depletion of natural resources and loss of biodiversity pose serious challenges for humanity. In this context, it becomes important to consider the role of cultural values in the search for solutions to ensure sustainable development [1].

The purpose of the work is to focus on Chinese culture and its potential role in promoting sustainable development. China, with its rich history and deep traditions, has a unique heritage of values that can be integrated into the modern context to solve environmental problems. The task is also to analyze which aspects of traditional Chinese culture can be applied in sustainable development strategies. We have focused on the philosophical concepts, ethical principles and practical methods proposed by Chinese culture, and conducted a study of their potential in the context of modern environmental challenges. During the analysis, attention is drawn to examples of successful integration of traditional

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values into modern sustainable development initiatives, identifying practical ways to implement these concepts in modern Chinese society.

2 Materials and methods

In the process of writing the study, an extensive literature analysis was carried out, including academic articles, books and other sources related to Chinese culture, traditions and sustainable development issues. Philosophical treatises and other materials reflecting traditional values in Chinese culture have been studied. It also analyzes current environmental problems in China, including climate change, environmental pollution and threats to biodiversity, using data and statistics. In addition, an ethnographic study was conducted to collect data on what traditional values are preserved in the daily life of modern Chinese and how they can be related to environmental sustainability. Successful examples of integrating traditional Chinese values into modern sustainable development initiatives were also studied in order to identify key success factors, as well as interviews with experts on Chinese culture, philosophy and ecology were conducted to gain a deep understanding of the influence of traditions on modern practices and prospects for their use to solve environmental problems.

These methods made it possible to systematize and analyze various aspects of the relationship between traditional values of Chinese culture and sustainable development in the context of modern environmental problems.

3 Results

Rapid climate changes, depletion of natural resources and loss of biodiversity pose serious challenges for humanity. In this context, it becomes important to consider the role of cultural values in the search for solutions to ensure sustainable development [2].

Global environmental problems, such as climate change, depletion of natural resources and loss of biodiversity, require integrated and innovative approaches to their solution. However, in addition to technical and scientific aspects, cultural values play an important role in the formation of human understanding and attitude to nature [3].

Cultural values can serve as a powerful source of motivation for environmental conservation and sustainable use of resources. In various cultures of the world, there are traditional principles and teachings that emphasize the harmony of man with nature and the responsibility for maintaining its balance [4].

Consideration of these values in the development of sustainable development strategies can contribute to deeper, successful implementation of environmental initiatives. Moreover, cultural characteristics can play a key role in shaping public opinion and motivation, which is important for creating sustainable public practices. Thus, when solving modern environmental problems, it is necessary to take into account not only technical and economic aspects, but also pay attention to cultural values in order to create a deeper and more stable foundation for environmental management and ensuring future sustainable development.

Cultural values can also serve as a key mechanism for the formation of public consciousness and ethical norms aimed at caring for nature [5]. Various rituals, customs and myths embedded in culture can contribute to the formation of a sense of responsibility for the environment and its preservation for future generations. It is also important to note that cultural values are not static, and they can evolve in accordance with changing conditions [6]. Adaptation of traditional values to modern challenges can contribute to their actualization and application in new contexts, which, in turn, can enrich environmental practices and strategies. The process of interaction between cultural values and sustainable development

also provides a unique opportunity for dialogue between different cultures and the exchange of experience. This contributes to the formation of global consciousness and solidarity in solving environmental problems, since many of them are of a cross-border nature [7]. Thus, the consideration of cultural values in the context of sustainable development is a promising approach that contributes to the creation of profound and sustainable changes in attitude to the environment. Chinese culture with its centuries-old history and deep traditions is a valuable resource for finding solutions to modern environmental problems [8]. In this context, several aspects of Chinese culture can be identified as potential sources of support for sustainable development.

1. The philosophy of Tseng. The principles of Tseng, emphasizing harmony, balance and interaction with nature, can be useful in the formation of sustainable practices. This philosophy promotes awareness of the connection between man and nature, which can inspire responsible consumption and sustainable lifestyles. Tseng philosophy provides deep lessons about harmony, balance and human interaction with nature. The principles of Tseng, such as mindfulness, can inspire individual changes in behavior aimed at caring for the environment [9]. The introduction of Tseng principles into educational programs and public campaigns can contribute to the formation of a deeper understanding of man's connection with nature and promote the adoption of more sustainable lifestyles. The development of environmental initiatives based on the principles of Tseng can contribute to the creation of a more harmonious and sustainable human interaction with the environment.
2. Traditions of the tea ceremony. The rituals of this ceremony in Chinese culture are usually associated with harmony and attention to detail. These principles can be used to promote sustainable practices in the field of tea production and consumption, as well as in other areas. The integration of the principles of the tea ceremony into modern tea drinking practices can promote the popularization of sustainable tea production methods and contribute to the formation of public interest in maintaining biodiversity.
3. Taoist philosophy. The principles of Taoism, such as naturalness, humility before nature and acting in accordance with the natural order of things, can serve as a basis for the development of sustainable development strategies. The introduction of the principles of naturalness from Taoism into the sphere of natural resource management can contribute to a more sustainable use of natural resources [10]. This approach implies that one should interact with nature in harmony, respecting its cycles and balance. The principle of balance, symbolized by the concept of "Yin and Yang", can be applied in sustainable development strategies to create balanced approaches to social and environmental issues. Taoist philosophy teaches humility before nature and the pursuit of sustainability. These principles can become the basis for the development of environmentally responsible practices in the production and consumption of goods and services [11]. The promotion of a contemplative view of nature, as prescribed by Taoist philosophy, can inspire the public to appreciate the environment and protect natural landscapes. The principle of "Wu Wei", which implies the natural flow of things, can be used to promote conscious consumption and reduce excessive consumption of resources. The integration of these aspects of Taoist philosophy into modern sustainable development strategies can contribute to the creation of harmonious and effective approaches to environmental conservation and ensuring a sustainable future.
4. The art of Feng shui. Feng shui, as a teaching about the harmony of space, can be integrated into sustainable construction and urban planning, contributing to the creation of more sustainable and environmentally friendly inhabitants [12]. The principles of Feng shui, aimed at creating harmony in the surrounding space, can be used in urban planning and architecture to form sustainable urban areas.

The application of Feng shui principles in construction can include the selection of energy-efficient materials, optimal space allocation and maximizing the use of natural light, contributing to the sustainability of buildings and infrastructure. Feng Shui can be integrated into agricultural practices to create sustainable and harmonious rural landscapes, emphasizing interaction with natural elements.

The principles of Feng shui can also be applied in an office environment to increase comfort, creativity and productivity, which can influence the improvement of overall corporate sustainability. The principles of feng shui can also include consideration of natural factors, such as terrain and water resources, in urban planning plans, ensuring the sustainability of urban communities [13]. Integrating these aspects of feng shui into various fields, ranging from urban design and architecture to agriculture and business practices, can contribute to the formation of sustainable practices and the creation of an environment conducive to well-being and balance with nature.

5. Traditional methods of agriculture. Traditional Chinese agricultural practices, such as terracing and the use of organic methods, can be adapted to create more sustainable food supply systems [14]. Traditional terracing methods used in agriculture can be adapted to combat soil erosion and optimize the use of water resources. Contour arable farming can contribute to the preservation of the soil layer and water permeability. Traditional irrigation systems, such as drip irrigation and canals, can be implemented for more efficient use of water in agriculture. This can lead to sustainable water resources management and drought management [15].

Traditional methods of using organic fertilizers, such as composting and green fertilizer, can be important components of sustainable agriculture, helping to preserve soil fertility and reduce dependence on chemical fertilizers. The use of traditional crop rotation methods can support biodiversity, reduce the risk of disease and increase the sustainability of agricultural systems. The support of traditional plant varieties adapted to local conditions can contribute to the conservation of biodiversity and increase the resilience of crops to climate change.

Traditional community farming methods, such as cooperatives and joint plots, can not only contribute to more efficient use of resources, but also support the social aspects of sustainable development [16]. The integration of these traditional methods into modern agricultural practices can contribute to the formation of sustainable and resilient agricultural systems that can withstand environmental changes and ensure food security. The integration of these aspects into modern development and environmental management strategies can contribute to a more effective solution of environmental problems and the formation of sustainable societies. At the same time, it is important to take into account that the successful integration of cultural values requires a balanced interaction with modern scientific and technological approaches to sustainable development.

Let's look at examples of successful integration of traditional values into modern sustainable development initiatives. In some modern Chinese cities, when designing new districts, the principles of Feng shui are used to create harmonious and sustainable urban spaces. This may include choosing the location of buildings, using natural elements in landscape design and taking into account water resources [17]. The integration of traditional farming methods, such as crop change and the use of organic fertilizers, into modern agricultural practices can increase the sustainability and preservation of soil fertility.

The use of traditional knowledge about medicinal plants in the development of new drugs and pharmaceutical products can reduce dependence on chemicals and contribute to the conservation of biodiversity. Some farmers in China are successfully integrating traditional farming methods, such as crop rotation, together with modern technologies. The use of smart agricultural systems and agrotechnologies reduces the environmental impact while maintaining sustainability and efficiency [18]. Some educational institutions in China are introducing Taoist principles into teaching, emphasizing harmony with nature and respect for

the environment. This may include the introduction of environmental courses, the organization of training programs on sustainable development and the promotion of research projects in the field of ecology.

A number of Chinese regions are successfully integrating cultural values into the development of eco-tourism. This may include the preservation of natural landscapes, the creation of routes based on traditional stories and customs, and the introduction of sustainable practices in the infrastructure of tourist sites. The development of a tourism industry focused on nature conservation and respect for cultural traditions can contribute to the preservation of ecosystems and the provision of jobs for the local population. Traditional production methods and green technologies are being introduced at some Chinese enterprises. An example is the use of traditional methods in the production of fabrics and clothing, taking into account the principles of sustainability and environmental care. In traditional Chinese culture, there is a concept of "Qi" or "energy", which implies balance and harmony with the surrounding nature. This philosophy can be implemented in modern methods of resource management and industrial processes to minimize the negative impact on ecosystems [19].

Chinese medicine with a thousand-year history pays attention to the use of plants for the treatment and maintenance of health. The application of this knowledge in modern medicine and pharmaceuticals can contribute to the development of more sustainable and environmentally friendly treatments. Traditional Chinese values, such as Confucianism, may emphasize the importance of sustainability and long-term planning. These principles can be used to develop policies and strategies aimed at sustainable use of resources and conservation of nature for future generations. Also, national religious and cultural practices often include the worship of natural elements, which can serve as a source of inspiration for creating campaigns to preserve nature and increase environmental awareness among the population. The integration of these elements into China's modern society and business practices can contribute to more sustainable development, reduce negative environmental impacts and preserve biodiversity. Discussion. Despite the presence of traditional values in Chinese culture, there are some problems that may complicate their integration into modern sustainable development efforts. With the development of industrialization in China since the end of the 20th century, there has been a significant increase in air, water and soil pollution. This creates challenges for the preservation of traditional ecological values [20]. The rapid growth of cities and an increase in the area under construction can lead to the loss of traditional agricultural methods that previously maintained a balance with nature. An increase in the level of consumption and the use of resources may contradict the traditional principles of thrift and respect for nature.

Global climate change can cause extreme weather events, which creates additional problems for traditional methods of agriculture and environmental protection. The use of modern technologies and high-energy production processes can lead to environmental problems that are difficult to reconcile with traditional values. Some traditional values may be lost due to lack of education and awareness. For example, the younger generation may not know how to use traditional methods of sustainable farming [21].

For the successful integration of traditional values of Chinese culture into modern efforts for sustainable development, the following solutions can be suggested:

- to develop educational programs and information campaigns aimed at preserving and transmitting traditional values in the field of sustainable use of resources and respect for nature;
- to promote the development of technologies that comply with the traditional principles of sustainability and thrift, for example, in the field of agriculture, energy and manufacturing;
- to support and develop industries based on traditional crafts, agriculture and other activities that respect nature and conform to traditional values;

- encourage the participation of local communities in the management of natural resources and decision-making that affect the environment, taking into account traditional knowledge and experience;
- to promote the development of ecotourism with an emphasis on traditional cultural practices and respect for the surrounding nature;
- invest in scientific research aimed at studying traditional methods of agriculture, medicine and other fields to determine their applicability and adaptation in modern conditions;
- develop and implement environmental standards and regulations that comply with traditional values and promote sustainable use of resources [22];
- support state programs and initiatives aimed at preserving and developing traditional values in the context of sustainable development;
- develop programs and initiatives aimed at involving young people in sustainable practices, including the use of traditional values as a source of inspiration for innovation.

The application of these solutions can contribute to the successful integration of traditional values of Chinese culture into modern sustainable development strategies.

4 Conclusion

Chinese culture has a rich heritage of traditional values that include respect for nature, balance and harmony with the environment, as well as long-term planning and sustainability. Modern environmental problems, such as environmental pollution, loss of biodiversity and climate change, require innovative approaches to achieve sustainable development. The integration of traditional values into modern practices can serve as a key factor in solving environmental problems.

The application of these values in agriculture, medicine, technology and education can strengthen the sustainability of society. It is necessary to develop educational technologies for the preservation and transmission of traditional values. Educating new generations and educating society about the ecological aspects of traditions can be a key factor for their preservation.

The integration of traditions should not imply the rejection of modern technologies and methods. It is important to find a balance between preserving traditions and using innovations to achieve sustainable development. Successful integration of traditional values requires support from both the state and society. Effective policies and programs can encourage sustainable practices. In general, the integration of traditional values of Chinese culture into modern efforts for sustainable development is a promising way to create a more sustainable, harmonious and responsible society.

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